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of CN 1132449A

Patent number: EP0713337
Publication date: 1996-05-22
Applicant: THOMSON CONSUMER ELECTRONICS (US)

Abstract of **EP0713337**

A Digital signal processor selectively demodulates and decodes signals received from multiple types of transmission channels such as satellite, terrestrial and cable transmission channels. A received signal is representative of compressed digital video information such as television picture information, and is encoded in one of a plurality of coding formats (e.g., trellis or punctured codes of selectable code rate). The received signal is also modulated in one of a plurality of modulation formats (e.g., PAM, QAM or PSK). A demodulator selectively demodulates the signal modulated in one of the plurality of modulation formats, and a decoder selectively decodes the demodulated signal coded in one of the plurality of coding formats.

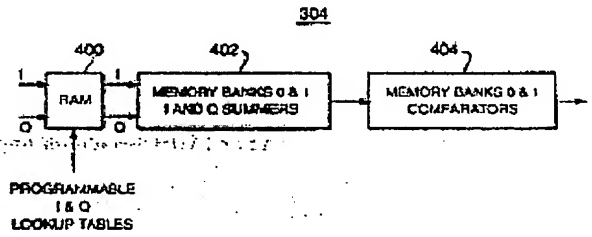

FIG 4

Description of **EP0713337**

The invention is related to the field of digital signal processing apparatus suitable for use in a multi-channel receiver of satellite, terrestrial and cable transmitted digital television data.

Known in the art is the use of forward-error-correction that includes convolutional encoding in the transmission of encoded digital data over a noisy channel from a transmitter to a receiver that includes a branch metric computer for a Viterbi-algorithm based convolutional decoder. The Viterbi Algorithm is used very commonly to decode a convolutionally encoded sequence of bits transmitted over a noisy channel. In the heart of the Viterbi algorithm is a series of repetitive add-compare-select operations which accept as input certain metrics (termed branch metrics) computed on each received symbol from the demodulator. For satellite, cable and terrestrial transmission of high data rate signals, such computations need to performed at very high rates.Furthermore, in a modem/decoder operating over different channels with different (but related) coding schemes, the cost of computing the branch metrics becomes excessive in terms of lookup table memory or actual hardware to perform these computations.

In the case of a satellite transmission channel, it is customary to transmit some particular punctured quaternary phase shift keyed (QPSK) code known to the receiver's convolutional decoder. In the case of a terrestrial or cable transmission channel, some particular pragmatic

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[19]中华人民共和国专利局

[11] 公开号 CN 1132449A

[12] 发明专利申请公开说明书

[21]申请号 95119730.4

[51]Int.Cl[6]
H04N 7/26

[43]公开日 1996 年 10 月 2 日

[22]申请日 95.11.17

[30]优先权

[32]94.11.18[33]US[31]342,280

[32]95.7.12 [33]US[31]501,752

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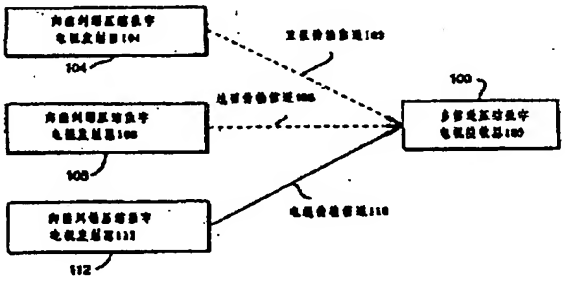
[54]发明名称 用于对卫星、地面和电缆上传输的数字电视数据进行解调和译码的装置

[57]摘要

一个数字信号处理器对来自多种类型的传输信道(例如卫星、地面和电缆传输信道)的信号进行解调和译码。接收到的信号是指压缩数据视频信息，例如电视图像信息，并且按多种编码格式中的一种格式编码(例如可选编码率的格构或收缩编码)。接收到的信号还按多种调制格式中的一种格式调制(例如，PAM，QAM 或 PSK)。解调器对按照多种调制格中的一种格式调制的信号进行解调，而译码器对按照多种编码格式中的一种格式编码的解调后的信号进行译码。



(BJ)第 1456 号

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